

memorandum

DATE: October 16, 1990

REPLY TO
ATTN OF: Migratory Bird Field Coordinator, Memphis, TN

SUBJECT: Holla Bend NWR Fishery Management Plan

TO: Associate Manager Drake, Refuges & Wildlife, FWS, Atlanta, GA

The subject plan is attached. I would like to point out that recommendations 1 and 2 on page 2 are developments that Manager Perry and I have discussed in the past. If these recommendations should be implemented, I believe that the water management program should focus on waterfowl needs first and fishery needs second.

/s/ Donald M. Orr

By: *Dunn*

cc: John Forester, Natchitoches NFH
Refuge Manager, Holla Bend NWR

Nothing Succeeds Like Safety

FISHERY MANAGEMENT PLAN

HOLLA BEND NATIONAL WILDLIFE REFUGE
RUSSELLVILLE, AR

PREPARED BY: John S. Foester 10/10/90
FISHERIES BIOLOGIST, OFA
NATCHITOCHES, LA DATE

SUBMITTED BY: T. Anthony Maycutt 10/10/90
PROJECT LEADER, OFA
NATCHITOCHES, LA DATE

CONCURRENCE: Garth A. Perry Oct 4, 1990
PROJECT LEADER
HOLLA BEND NATIONAL WILDLIFE REFUGE DATE

Don H. Orr 10/15/90
WILDLIFE MANAGEMENT BIOLOGIST
MEMPHIS, TN DATE

ASSOCIATE MANAGER
RF I, ATLANTA, GA DATE

APPROVED: _____
ASSISTANT REGIONAL DIRECTOR
FISHERIES AND FEDERAL AID
FWS, REGION IV, ATLANTA, GA DATE

APPROVED: _____
ASSISTANT REGIONAL DIRECTOR
WILDLIFE RESOURCES
FWS, REGION IV, ATLANTA, GA DATE

SUMMARY STATEMENT

Holla Bend National Wildlife Refuge is situated in the Arkansas River Valley of west central Arkansas in Pope and Yell counties near the towns of Russellville and Dardanelle. The 6,367 acre refuge contains three waterbodies totaling 280 acres which are subject to annual overflows from the Arkansas River (see map- Appendix I). Overflows contribute six to eight feet of water for a one to three month duration, a situation which produces very good fishing but severely limits the potential for population management. Because of these circumstances, the development of strategies, tasks, dates, funding, etc. for a fully developed fishery management plan was deemed unwarranted by the fisheries management biologist and the refuge manager. Therefore, this Summary Statement and Recommendations which follow will serve as the fishery management plan for Holla Bend National Wildlife refuge. For background information, a 1982 fishery management plan (revised 1990) is attached (Appendix II).

RECOMMENDATIONS

- 1) Raise the levee height between Lodge and Luther Lakes 18 to 24 inches to maintain depth in Lodge Lake.
- 2) Install dike on north end of Lodge to create new waterbody of approximately 100 acres in size.
- 3) Provide public access road to west side of Luther Lake from State Highway 155 pending refuge purchase of appropriate lands.

APPENDIX I

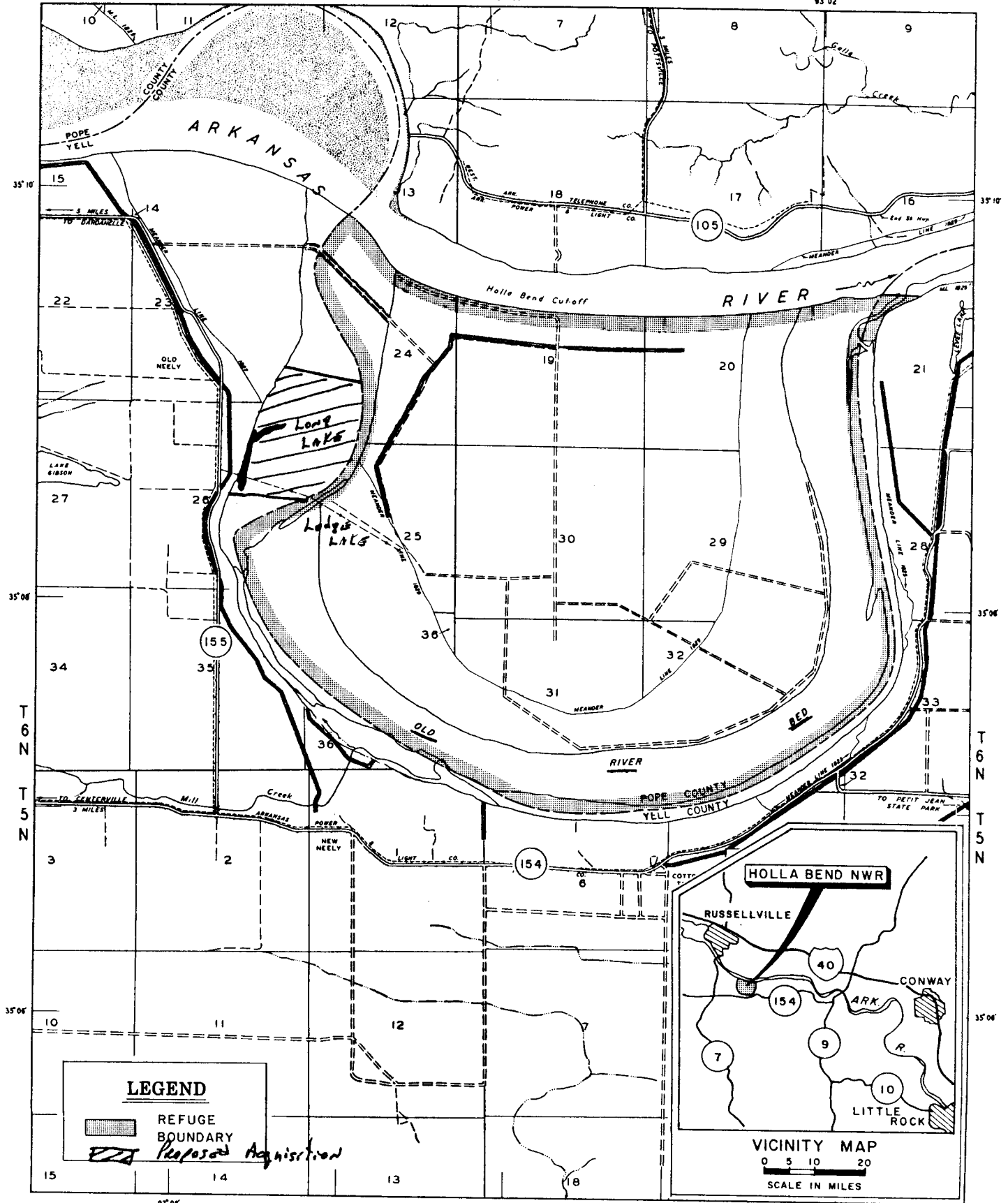
HOLLA BEND NATIONAL WILDLIFE REFUGE

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POPE AND YELL COUNTIES, ARKANSAS

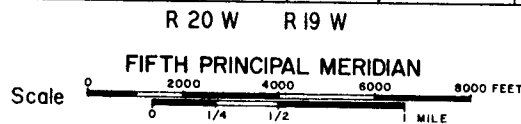
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FISH AND WILDLIFE SERVICE
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COMPILED IN THE DIVISION OF REALTY
FROM SURVEYS BY G.L.O., CORPS OF
ENGINEERS, AND AERIAL PHOTOS

ATLANTA, GEORGIA DECEMBER, 1967
REVISED: 1/89



FIFTH PRINCIPAL MERIDIAN

TRUE NORTH
MAGNETIC N
MEAN DECLINATION
1953

4R ARK 498 4c

APPENDIX II

FISHERY MANAGEMENT PLAN

**HOLLA BEND NATIONAL WILDLIFE REFUGE
POPE AND YELL COUNTIES, ARKANSAS**

Prepared by:

John S. Forester

U.S. Fish and Wildlife Service

Natchitoches National Fish Hatchery

Natchitoches, Louisiana

and

The Staff at Holla Bend National Wildlife Refuge

FISHERY MANAGEMENT PLAN
HOLLA BEND NATIONAL WILDLIFE REFUGE
POPE AND YELL COUNTIES, ARKANSAS

INTRODUCTION

This management plan was prepared by the U.S. Fish and Wildlife Service for Holla Bend National Wildlife Refuge. Data was provided by the Refuge staff. The plan outlines goals and objectives recommended by the Service's fishery management biologist and in accordance with Refuge Manual guidelines 7 RM 10 and 4 RM 3. The plan is to be used as a guide in managing the Refuge's fishery resources to the benefit of the resource. It will serve as a guideline in determining sport and commercial fishing activities and in managing a food source for piscivorous wildlife.

DESCRIPTION OF THE AREA

Holla Bend National Wildlife Refuge is situated in the Arkansas River Valley of west-central Arkansas in Pope and Yell counties. The towns of Russellville (population approximately 20,000) and Dardanelle (population approximately 3,500) are about 12 miles, respectively, northwest of the refuge. Dardanelle Lock and Dam #10, which backs up Lake Dardanelle and forms a portion of the Arkansas River Navigation Project, is 8 miles upriver from the refuge.

Habitat composition on the refuge is as follows (acreage): Cropland, 2,677; Timberland, 2,906; Grassland, 300; and Water, 484 for a total of 6,367.

This total acreage includes both land and water owned in fee title and areas closed to migratory bird hunting by Secretarial Order. Croplands, which are managed primarily under cooperative agreement with local farmers for the benefit of wintering waterfowl, are generally on the interior of the refuge, while timberlands form an outer band bordering the river channel.

Maintenance of wintering waterfowl is a prime objective at Holla Bend NWR. Concentrations of 40,000 ducks (95% mallards) and 25,000 geese are not uncommon in winter months. Priority is also placed on maintaining and protecting the endangered bald eagle. As many as 50 eagles frequent the refuge in late winter in response to large waterfowl concentrations. At least 9 young eagles are reared in a tower on the south end of the refuge. A small experimental transplant of alligators and occasional migrating peregrine falcons are the only other endangered species known to occur on the refuge.

Over 205 species of birds have been recorded on the refuge. Resident mammals encompass about 25 species. Small rodents, fox squirrels, cottontail rabbits, beaver, skunks, and armadillos are abundant, and white-tailed deer number around 300. Common warmwater fishes inhabit refuge lakes and the old river bed. Lowland species of reptiles and amphibians abound.

About 90% of the woodlands are comprised of cottonwood, black willow, bois d'arc and numerous shrub species. The other 10% include mast producers such as pecan, water and sawtooth oak. Corn, grain sorghum, soybeans, and wheat are major field crops. Most refuge wildlife is dependent on croplands as a food base.

Holla Bend NWR is covered by a very fine sand and a loamy fine sand in the Bruno series to a depth of well over one meter. Below this deposit is a gumbo type soil, Roxana, which is a silty backwater deposit.

Public use of the refuge includes fishing March through October and archery deer hunting October through December. Birdwatchers are common during periods of high waterfowl and eagle use. School groups, picnickers, and sightseers frequent the refuge. Total annual visits fluctuate around 30,000.

Fishery habitat is limited to two lakes within the old oxbow and a portion of the old river channel (Figure 1). The two lakes offer the most feasible management opportunities. All areas are subject to periodic backwater flooding from the Arkansas River.

MANAGEMENT HISTORY

Refuge records indicate initial efforts at fishery management in 1973. Personnel of Arkansas Game and Fish Commission stocked Lodge Lake with 900 catchable size channel catfish in July 1974. The same lake was stocked in 1977 with fingerling channel catfish from Corning National Fish Hatchery. The fishery management biologist from the Jackson Area Office visited the refuge in June 1980 and sampled three areas in Long Lake and two in Lodge Lake

with rotenone and experimental gill nets. Results indicated both lakes to be very productive but containing a biomass comprised mostly of carp, buffalo and shad.

Commercial fishing has been allowed in the old river channel for several years by special use permit. Originally 12 fishermen were allowed up to 15 nets each. Presently only three commercial special use permits are issued. Beginning in 1980 all commercial fishermen were required to report total weight and numbers of fish caught by species.

The sport fishing season runs from March 1 to October 31 each year. With the exception of seasons, sport fishing regulations on the refuge are the same as those of the State. Refuge personnel provide the necessary enforcement. Access to fishing areas are presently limited. Boat ramps are located on Lodge Lake and on the old river channel.

POTENTIAL FOR MANAGEMENT

Management potential of the fishery resource on Holla Bend NWR is limited by fiscal and physical factors. No funds for fishery work are currently available at the station level. None are predicted for the foreseeable future. Aquatic habitat is abundant on the refuge, but is subject to periodic backwater flooding. The inability to predict or control flooding limits the use of some fishery management techniques (i.e. control of rough fish, stocking, etc.).

GOALS

- Goal 1 - To provide and maintain a natural food source for indigenous, piscivorous wildlife.
- Goal 2 - To provide and maintain a productive sport fishery within Service guidelines for public use.
- Goal 3 - To utilize commercial fishing as a sound fishery management technique when compatible with refuge objectives.

MAJOR FACTORS INFLUENCING ACHIEVEMENT OF GOALS

- Goal 1 - To provide and maintain a natural food source for indigenous, piscivorous wildlife.

Achieving this goal should be relatively easy as most piscivorous wildlife are not selective as a prey species. However, many are selective as to prey size. Extended droughts could cause partial or total fish kills in some areas.

If these areas were not soon replenished naturally by backwater, restocking might be necessary.

- Goal 2 - To provide and maintain a productive sport fishery with Service guidelines for public use. The refuge is open to sport fishing under the general provision of 50 CFR 33.1 and the specific regulation under 50 CFR 33.8 (d).

The natural factor of uncontrollable and unpredictable flooding is the major limiting agent. Proper forage/carnivorous fish ratios are difficult to maintain under these conditions. Lack of funding will also limit intensive management efforts.

- Goal 3 - To utilize commercial fishing as a sound fishery management technique when compatible with refuge objectives.

Several variables will affect the usage of commercial fishing as a management technique. Commercial fishing must serve a sound management-oriented purpose (i.e. removal of rough fish). There must be some degree of public demand for commercial fishing. The activity must remain economically feasible for the fishermen and be compatible with refuge objectives.

STRATEGIES

- Goal 1 - To provide and maintain a natural food source for indigenous, piscivorous wildlife.

Strategy includes maintaining spawning populations to ensure various size fish by taking necessary corrective actions. Corrective action may include partial renovation, increased predator fish species to control forage fish, and commercial fishing.

- Goal 2 - To provide and maintain a productive sport fishery within Service guidelines for public use.

Strategies involve determination of management needs through periodic sampling visits utilizing a variety of sampling techniques, determination of spawning success and relative abundance of year classes to determine strategy which may include partial renovation, supplemental or corrective stocking, special fishing regulations, commercial fishing, or other actions.

Fishermen utilization will also be determined to use as justification for expenditure of funds and manpower.

- Goal 3 - To utilize commercial fishing as a sound fishery management technique when compatible with refuge objectives.

The present system for removing rough fish with commercial fishing gear will be continued.

EVALUATION AND UPDATE

This management plan will be updated as needed with reference to content and progress toward goal achievement. A reviewing committee consisting of the Associate Manager for Fisheries, the Associate Manager for Wildlife Resources, the Fishery Management Biologist and the Refuge Manager will review this plan periodically for necessary revisions or amendments.